

REMARKS

Favorable reconsideration of the above-identified application is requested in view of the following remarks.

Claims 1-12 remain canceled, and Claims 20 and 21 are newly added. Thus, Claims 13-21 are pending, with Claims 13 and 19 being independent.

An issue was raised with regard to Claim 17. Claim 17 is amended to address that issue.

Claims 13 and 19 are amended to address a formal antecedent basis issue. The amendments to those claims do not change the claim scope.

Claims 13-19 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,207,566 to Munkel et al., hereinafter *Munkel*.

Figure 1 in the present application shows a turbocharger 1 comprising a turbine 2 and a compressor 3. The turbine 2 essentially comprises a turbine wheel 4 with turbine blades 6 and a turbine housing 5, which encloses the turbine wheel 4. The compressor 3 comprises a compressor wheel 7 with compressor blades 8 and a compressor housing 9 enclosing the compressor wheel 7. The turbine wheel 4 and the compressor wheel 7 are connected to one another via a shaft 10, which is mounted in the bearing housing by means of various bearing elements. If the compressor wheel 7 were to burst during operation of the turbocharger 1 or if the connection between compressor wheel 7 and shaft 10 were to shear off, the turbine wheel 4 would accelerate to inadmissibly high speeds, since the counterforce otherwise produced by the compressor wheel 7 would be absent. In addition, the turbine wheel 4 would be subjected to an axial force component, which, owing to the lack of compensation by the compressor wheel 7, this compensation otherwise being

available, would lead to an axial movement and escape of shaft 10 and turbine wheel 4. It is desirable to prevent axial movement or escape of the shaft 10 and turbine wheel 4 upon bursting of the compressor wheel 7.

Addressing that issue, as can be seen in Figures 2A and 2B, a locking ring 22 is arranged on the shaft 10. The locking ring 22 engages in an annular groove 23 of the shaft 10 and projects radially outward beyond said annular groove 23. After a separation of the compressor wheel 7, an axial movement of the shaft 10 in the direction of the turbine wheel 4 is thus prevented by the locking ring 22.

Broadly encompassing that subject matter, Claim 1 defines a turbocharger comprising a turbine with a turbine wheel and a compressor with a compressor wheel. The turbine wheel and the compressor wheel are connected via a shaft. The shaft is rotatably and axially mounted by means of bearings arranged between the turbine wheel and the compressor wheel. The turbine wheel, the shaft and the compressor wheel are arranged in a housing and connected to one another in such a way that, in the event of the compressor wheel bursting, an axial force acts in the direction of the turbine and acts on the turbine wheel and the shaft connected to it. A means for axially locking the shaft and the turbine wheel connected to it is arranged between the compressor wheel and the turbine wheel on the shaft connected to the turbine wheel. The means, in the event of the compressor wheel bursting, prevents an axial movement of the shaft and of the turbine wheel connected to it in the direction of the turbine.

Munkel discloses a turbocharger bearing containing a sleeve 26 that is floatingly disposed in a bore 18 of a bearing case 6 for radially mounting a shaft 14. That is, the shaft fits through the bore 18 in the sleeve 26 and is not locked axially.

Claim 13 is allowable at least because it defines, among other features, that the turbine wheel, the shaft and the compressor wheel are arranged in a housing and connected to one another in such a way that, in the event of the compressor wheel bursting, an axial force acts in the direction the turbine acts on the turbine wheel and the shaft connected to it, wherein a means for axially locking the shaft and the turbine wheel connected to it is arranged between the compressor wheel and the turbine wheel on the shaft connected to the turbine wheel.

Munkel does not show a means for axially locking the shaft of a turbo charger in the event of a compressor wheel bursting. The only axial locking referred to in *Munkel* is in regard to a bearing sleeve through which the shaft 14 fits. That is, the retaining ring in *Munkel* referred to in column 4, lines 34+ (cited in the Office action) only provides axial retention of the bearing bushes 20, 22 and sleeve 26 in the bearing housing and the Shaft 14 is not fixed axially by any of the means disclosed in *Munkel*. Figure 3 in *Munkel* shows the shaft 14 extending axially through the opening in the bearing sleeve 26. There are no means shown in Figure 3 or discussed that prevent shaft 14 from moving into the direction of the turbine once the compressor wheel is disconnected.

For at least those reasons, the above noted claimed subject matter relating to axial locking of a shaft, as recited in Claim 1, is not disclosed or suggested by *Munkel*, and Claim 1 should be allowed.

Claim 19 is allowable for similar reasons as Claim 1 with regard to similar claim language.

The dependent claims are allowable at least by virtue of their dependence from allowable independent Claim 1.

For the reasons stated above, it is requested that all the objections and rejections be withdrawn and that this application be allowed.

Should any questions arise in connection with this application, the undersigned requests that he be contacted at the number indicated below.

Respectfully submitted,

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